# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Robert J. Deri et al.	Docket No.: IL-10504
		Art Unit :
Serial No.		Batch No. :
Filed	: Custing	Examiner :
For	: Wavelength-Conserving Grating Router For Intermediate Wavelength Density	
VERII STA	FIED STATEMENT (DECLARATION) CL TUS [37 CFR 1.9 (f) and 1.27(d)] - NONPR	AIMING SMALL ENTITY OFIT ORGANIZATION
I hereby organizat	declare that I am an official empowered ion identified below:	to act on behalf of the nonprofit
	The Regents of the University of Califor Office of General Counsel 1111 Franklin Street Oakland, CA 94607-5200	mia
	ORGANIZATION	
χ_U:	niversity or other Institute of Higher Educa	tion
I hereby nonprofi fees und	declare that the nonprofit organization it organization as defined in 37 CFR 1.9(e) der Section 41(a) and (b) of Title 35, United n entitled: Wavelength-Conserving Grant Density (a) Robert J. Deri, Rajesh R. Patel, Steventor(s)	identified above qualifies as a for purposes of paying reduced States Code with regard to the ting Router For Intermediate
describe		
_	X the specification filed herewith.	co 1
-	application serial no	, filea
	application serial no	issued

I hereby declare that rights under contract or law have been conveyed to and remain with the nonprofit organization with regard to the above identified invention, except for a license to a Federal Agency pursuant to 35 USC 202(c) (4).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

X no such person, concern, or organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true: and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

JANET G. TULK
Laboratory Counsel
Lawrence Livermore National Laboratory
7000 East Avenue, L-701
Livermore, CA 94551

Janel G. Julk JANET G. TULK

Date

6/7/00

## COMBINED DECLARATION AND POWER OF ATTORNEY

	Declaration submitted with Initial Filing	Applica	y Docket: IL-10504 nt: Robert J. Deri et al.
_	Declaration submitted after Initial Filing (surcharge (37 CFR 1.16(e)) required)	Serial N Filing D	
	•	_	
As	a below named inventor(s), I (we) her		
(oı	My (Our) residence, post office add ar) name(s).	dress and citizenship(s) ar	re as stated below next to my
cla	I believe I am the original, first and ginal, first and joint inventor (if plural named and for which a patent is sought or ating Router For Intermediate Way	ames are listed below) of n the invention entitled: \	the subject matter which is
X	specification of which (check one) _is attached heretowas filed mber or PCT International Application		United States Application
an	I was amended on(if applicable).		
ide	I (We) hereby state that I (we) have ntified specification, including the clain	e reviewed and understanns, as amended by any ar	d the contents of the above- nendment referred to above.
de	I (We) acknowledge the duty to dis ined in 37 CFR 1.56.	close information which	is material to patentability as
ap be	I (We) hereby claim foreign prioriteign application(s) for patent or inventoblication which designated at least one cow and have also identified below, by centor's certificate, or of any PCT international priority is claimed.	r's certificate, or 365(a) (country other than the Un checking the box, any for	of any PCT international ited States of America, listed eign application for patent or
Pri	or Foreign Application(s)	·	Priority Not Claimed
(A	pplication Number) (Country)	(Foreign Filing Date)	
(A	pplication Number) (Country)	(Foreign Filing Date)	•
ap	I (We) hereby claim the benefit uno plication(s) listed below:	der 35 U.S.C. 119(e) of a	ny United States provisional
	00.112033	/30/99	
A	plication Serial No. Fil	ing Date	1



I (We) hereby claim the benefit under 35 U.S.C. 120 of any United States applications(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application Serial No.	Filing Date	Status
POWER OF ATTORNEY: registered practitioner(s) to pr	osecute this application and	I (we) hereby appoint the following I to transact all business in the Patent an
Names	Registra	ation No.
Alan H. Thompson	29,9	81
Christopher J. Horgan	40,3	94
Eddie E. Scott	25,2	
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Patent Attorney		L.E. Carnahan
Lawrence Livermore N	(925) 422-5024	
P.O. Box 808 - L-703		
Livermore, California	94551	

I (We) hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

ROBERT J. DERI	SEE PAGE 4		
Full Name of Inventor	Signature		
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I (We) hereby claim the benefit under 35 U.S.C. 120 of any United States applications(s), or 365(e) of any PC1 international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States of PCT international application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the daty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application Serial No.	Filing Date	Status
POWER OF ATTORNEY: As registered practitioner(s) to prosecuted there	cute this application and	I (we) hereby appoint the following I to transact all business in the Patent and
Numes		ation No.
Alan II, Thompson 29,9		81
Christopher J. Ylorgan 40,3		94
Eddic E. Scott	25,2	20
Direct Correspondence To	); ,	Direct Telephone Calls To:
I.B. Camahan Patent Attorney Lawrence Livermore National Laboratory		(Name and Telephone Numbers)
		L.E. Carnahan
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Livermore, California 94:	551	

I (We) hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

ROBERT J. DERI	Rht I fleri
Full Name of Inventor	Signature
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RAJESH R. PATEL	
Full Name of Inventor	Signature
PLEASANTON, CALIFORNIA	
Residence (City, State or Foreign Country)	Date
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Postal Address (Street, City, State, Zip Code	Citizenship
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.  1. Name of conveying party(ies):  2. Name and Address of receiving party(ies):  The Regents of the University of California  1111 Franklin Street  Oakland, CA 94612-3550  Attorney Docket No.: IL-10504  3. Nature of conveyance:  Assignment  Assignment  Execution Date: 8/15/00  4. Application number(s) or patent number(s): IL-10504  If this document is being filed together with a new application, the execution date of the application is:  A. Patent Application No.(s)  B. Patent No.(s)	Form PTO- 1/31/92	1595,	ECORDA	NOITA	COV	ER SH	EET 🐷	DEPARTMENT ( Patent and T	OF COMMERCE rademark Office
1. Name of conveying party(ies): 1. Inventor's Names:  Robert J. Deri  Attorney Docket No.: IL-10504 3. Nature of conveyance:  Assignment  Assignment  Execution Date:  Assignment being filed together with a new application, the execution No.(s)  A. Patent Application No.(s)  B. Patent No.(s)  S. Name and address of party to whom correspondence concerning document should be mailed:  Name:  L.E. Carnahan  Address:  Lawrence Livermore Nat. Laboratory Intellectual Property Law, L-703  The Regents of the University of California  11111 Franklin Street Oakland, CA 94612-3550  8/15/00  8/15/00  B. Patent No.(s)  B. Patent No.(s)  Finclosed Authorized charge deposit account Deposit Account number: 12-0695									
The Regents of the University of California  1111 Franklin Street Oakland, CA 94612-3550  Attorney Docket No.: IL-10504  3. Nature of conveyance:  Assignment  Assignment  Execution Date: 8/15/00  4. Application number(s) or patent number(s): IL-10504  If this document is being filed together with a new application, the execution date of the application is:  A. Patent Application No.(s)  B. Patent No.(s)  5. Name and address of party to whom correspondence concerning document should be mailed:  Name: L.E. Carnahan  Address: Lawrence Livermore Nat. Laboratory Intellectual Property Law, L-703  Toolo East Avenue Livermore, CA 94550  The Regents of the University of California  1111 Franklin Street Oakland, CA 94612-3550  8/15/00  B./15/00  B. Patent No.(s)  Finclosed Authorized charge deposit account Deposit Account number: 12-0695				marks: P	lease i	ecord the	attached or	riginal documents	or copy thereof.
Robert J. Deri  The Regents of the University of California  1111 Franklin Street Oakland, CA 94612-3550  Attorney Docket No.: IL-10504  3. Nature of conveyance:  Assignment  Execution Date:  Assignment  Execution Date:  8/15/00  4. Application number(s) or patent number(s): IL-10504  If this document is being filed together with a new application, the execution date of the application is:  A. Patent Application No.(s)  B. Patent No.(s)  5. Name and address of party to whom correspondence concerning document should be mailed:  Name:  L.E. Carnahan  7. Total fee  \$ 40.00  Address: Lawrence Livermore Nat. Laboratory Intellectual Property Law, L-703  Tooo East Avenue Livermore, CA 94550  Deposit Account number:  12-0695				2				<u> </u>	
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To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.	To the	best of my knowledge a	nd belief, the f	ioregoin	g infor	mation i	s true and	correct and any	attached copy
Kathy E. Raymond Kutly E. Ruymend Blize	Kat	thy E. Raymond	1 1/4			<u> </u>	nd	2/17	lw
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Rajesh	R. Patel		' '			94612-35	50		٠
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Total number of pages comprising cover sheet

Kathy E. Raymond Name of Person Signing

#### **ASSIGNMENT**

LLNL Case No.: IL-10504	
For good and valuable consideration the recei	pt of which is hereby acknowledged ASSIGNOR(s)
1. Rajesh R. Patel	2. Steven W. Bond
3. Cory V. Bennett	4
5	6
7	8.
9	10
Corporation, having its statewide administration 94607-5200, and the successors, assigns a interest for the United States and its territor improvements which are disclosed in the inventor	SIGNEE, the Regents of the University of California, a California ative offices located at 1111 Franklin Street, Oakland, California and legal representative of the ASSIGNEE all of its right, title and rial possessions and in all foreign countries in and to, any and all ntion entitled:
and which is found in	
	6/27/00 , entitled as above and inventors
☐ U.S. patent application serial no	, filed on
U. S. patent no, issue	ed
	country, including the right to claim priority and, in and to, all Letters above application or any continuation, division, continuation-in-part, sue, reexamination or extension of said Letters Patent and all rights otection of Industrial Property;
or entered into which would conflict with this a	
facts and documents relating to said invention and accessible to ASSIGNOR and will testify thereto and will promptly execute and deliving instruments or affidavits required to apply for and said Letters Patent and said equivalent purposes thereof. An attorney of record is autinto this assignment the filing date and serial	GNEE will, upon its request, be provided promptly with all pertinent on and said Letters Patent and legal equivalents as may be known as to the same in any interference, litigation, or proceeding relating ver to ASSIGNEE or its legal representative any and all papers, or, obtain, maintain, issue or enforce said application, said invention into the thereof which may be necessary or desirable to carry out the authorized and requested by the execution of this assignment to insert number of said application when officially known.
AND the <u>ASSIGNOR(S)</u> requests the Commente United States and any reissue or external California.	nissioner of Patents and Trademarks to issue said Letters Patent of nsion thereof to the ASSIGNEE, the Regents of the University of
executed this	Signature of Inventor(s)
6/27/00	Rajesh R. Patel

Date

executed this	Signature of Inventor(s)
6/27/00	Stee when
Date	Steven W. Bond
6/27/00	Cory Dennett
Date	Cory & Bennett
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#### ASSIGNMENT

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Pale exter undo	nt to be obtained histori or substitute or all international	tof said invention by the e-thereot, and any relas Conventions for the Pro	country, including the right to claim priority and, in and to, all Letters e above application or any continuation, division, continuation-in-part, sue, reexamination or extension of said Letters Patent and all rights occupion of Industrial Property:
or cr	tterod into which i	MORTO COLLINCA MINU MINA E	signment, sale, agreement or encumbrance has bean or will be made assignment;
facts and then instr and purp into	and documents accessible to AS: eto and will pronuments or attidate said Letters Pat access theroof. An this assignment the said content to the content to t	relating to each invertice SIGNOR and will testify aptly execute and deli- rits required to apply for ent and eald equivaler attorney of record is at the filling date and eerial	GNEE will, upon its request, be provided promptly with all pertinent ion and said Letters Patent and legal equivalents as may be known y as to the same in any interference, litigation, or proceeding relating liver to ASSIGNEE or its legal representative any and all papers, or, obtain, maintain, issue or enforce said application, said invention into thereof which may be necessary or desirable to carry out the luthorized and requested by the execution of this assignment to insert inumber of said application when officially known.
the	o the <u>ASSIGN</u> QE United States ar fornia.	(S) requests the Common and any reissue or exte	missioner of Patents and Trademarks to issue said Letters Patent of ension thereof to the ASSIGNEE, the Regents of the University of
exe	cuted this	<u>.                                    </u>	Signature of Inventor(s)  Add for All Francisco Control of the Con
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#### **ASSIGNMENT**

۱	LNL Case No.: IL-10504
ļ	For good and valuable consideration the receipt of which is hereby acknowledged ASSIGNOR(s)
	. Robert J. Deri 2.
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	hereby sells, assigns and transfors to ASSIGNEE, the Regents of the University of California, a California Corporation, having its statewide administrative offices located at 1111 Franklin Street, Oakland, California 94607-5200, and the successors, assigns and legal representative of the ASSIGNEE all of its right, title and interest for the United States and its territorial possessions and in all foreign countries in and to, any and all improvements which are disclosed in the invention entitled:
_	Wavelength-Conserving Grating Router For Intermediate Wavelength Density
	and which is found in
	U.S. patent application executed on, entitled as above and listing the above named persons as inventors
	U.S. patent application serial no, filed on
	U. S. patent no, issued
	and any logal equivalent thereof in a foreign country, including the right to claim priority and, in and to, all Letters Patent to be obtained for said invention by the above application or any continuation, division, continuation-in-part, extension or substitute thereof, and any reissue, reexamination or extension of said Letters Patent and all rights under all International Conventions for the Protection of Industrial Property;
	ASSIGNOR(S) hereby covenants that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment;
	ASSIGNOR(S) further covenants that ASSIGNEE will, upon its request, be provided promptly with all pertinent facts and documents relating to said invention and said Letters Patent and legal equivalents as may be known and accessible to ASSIGNOR and will testify as to the same in any interference, litigation, or proceeding relating thereto and will promptly execute and deliver to ASSIGNEE or its legal representative any and all papers, instruments or affidavits required to apply for, obtain, maintain, issue or enforce said application, said invention and said Letters Patent and said equivalents thereof which may be necessary or desirable to carry out the purposes thereof. An attorney of record is authorized and requested by the execution of this assignment to insert into this assignment the filing date and serial number of said application when officially known.
	AND the <u>ASSIGNOR(S)</u> requests the Commissioner of Patents and Trademarks to issue said Letters Patent of the United States and any reissue or extension thereof to the ASSIGNEE, the Regents of the University of California.
	Signature of Inventor(s)  Ald fluid  Robert J. Deri



#### **RECORD OF INVENTION**

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IX. Inventor Information

Full Name	Citizenship	a separate sheet for additional inventors.)  Street Address	City, State, Zip Code
Robert J. Deri	USA	3769 Angus Way	Pleasanton, CA 94588
Rajesh R. Patel	USA	2503 Santa Rita Road #42	Pleasanton, CA 94566
Steven W. Bond	USA	1945 Whitecliff Court	Walnut Creek, CA 94596
Corey V. Bennett	USA	583 Debra Street	Livermore, CA 94550
Outcy V. Donnon			
	1	1	

X. Funding Source
Funding Source or Project Under Which the Invention Arose (Include subcontracts, CRADAs, International agreements, work for others, or special project information.):

Resource Manag	ier	Phone #		Yes	No				
Pam Richmond 424-496  LLNL Acct # B&R # F		424-4965		X_					
			Please state the source of funds (if same as above, please so state):						
		E	Engineering ER-LDRD						
Subcontract.#_	DOE Program	Code Do	you reasonably expect future funding from the current source or other sources?	Yes	INC				
				X	上				
CRADA #	Work for Other	s# If v	If yes, what is that source?						
		U	S Government, possibly FY00 LDRD						

XI. Conception of the Invention

Conception Date	Conception Place			
7/21/98	B132S, Room 1771			
Earliest documentation	of your invention (please provide date and identify the	First Sketch or Drawing Date 7/21/98	First Written Description Date 7/21/98	
Names of Witnesses or	others with knowledge of facts relating to conception (pr	eferably at least 2):	Telephone Number	
Full Name Mark Lowry	Organization B-Division Photonics		423-2924	
Mike Pocha	Engineering EETD		422-8664	

XII. Reduction To Practice of the Invention

Date first model completed	Date of operation and testing	Place of test
2/22/00	2/23/99	B132S, Rm 1719
Results of testing: demonstrat	(II _10266) for output combining	rating with channels at 820, 865, and 900 nm using single strands of multimode. Insertion loss approx. 10 dB.
Demonstrated a 3-wave filters. Results showed	elength, 3x3 router based wavelength-conservative	on a diffraction grating in Littrow configuration and 3 porterouting. See attached Fig. 3.
Witnesses or others with direct	ct knowledge of test (preferably a	at least 2):  Telephone Number
Full Name	Organization	
Mark E. Lowry	B-Division Photo	
Henry Garrett	Engineering/EE	TD 422-5639



### RECORD OF INVENTION Page 5

LLNL File No.

s the invention been put into use?	Yes	osure	explain:				
		X		•			
as the invention been disclosed to no			?	Yes	No_	If yes, to whom and when? Provide r	name(s) and date(s):
					X	•	
yes, was the disclosure done under	a non-di	sclosure ag	reement?	Yes	No		
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IV. I/We believe myself/ours	elves	Date	first and o	origin   Wit	nal ir	ventor(s) of the above-describe	ed invention.  Date  3/9/99
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Other Guide(s):			<del></del>				
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### RECORD OF INVENTION

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II. Invention Use a					
as the invention been put into	USE 7 YES NO	ii yes, expiain:	· · · · · · · · · · · · · · · · · · ·	<del></del>	
las the invention been disclose		ersonnel?	Yes No III yes,	to whom and when? Provi	de name(s) and date(s)
las une invention deen disclose	2 W INITELINE P		X X		
yes, was the disclosure done u	inder a non-disc	osure agreement?	Yes No		······································
Tyes, was the disclosure done	ander a non disc	loodic agreement	N		•
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IV. I/We believe myself/	ourselves to	be the first and c	riginal inventor	(s) of the above-desc	ribed invention.
nventor Signature		Date	Witness Signatur		Date
Role Jhin		2/9/91	Sene	(Induson	3/9/99
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V. Classification Re	eview				
Basis for unclassified release: Outside scope of AEA and	FO				``
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Other Guide(s):	· .	· .		<u> </u>	
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uthorized Derivative Classifier -	- Name and Title	9	Signat	ure 0	/ / /
Steve Swierkowski	Engineer		1	La Vicinto	- 4h; 2/10
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VI. For LLNL Paten	t Group Us	se Only			,
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Public Use/Sale	-	•			<u> </u>
Recommended Filing Date Due 1	o Possible Statu	itory Bars			
Preliminary Review By:		Date		<u> </u>	
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